

IN THE DRAWINGS:

Please amend Figure 1 as shown in the attached drawing sheet.

REMARKS

The Office Action dated December 14, 2007, has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

In this Response, Applicants submit herewith an amended drawing sheet for Figure 1 to correct a minor informality. Specifically, Figure 1 has been amended to correctly illustrate the leader line indicating bush 47, which is described in the Specification at least on page 13, line 15, to page 15, line 11.

Furthermore, in this Response, claims 1, 9, and 11-12 have been amended to more particularly point out and distinctly claim the subject matter of the present invention. Claim 8 was previously cancelled without prejudice or disclaimer. Support for the above amendments is provided in the Specification at least on page 14, lines 9, to page 15, line 11, and page 27, line 13, to page 28, line 10, and at least illustrated in Figure 3. Accordingly, claims 1-7 and 9-12 are currently pending in the application, of which claims 1, 9, and 11 are independent claims. Applicants request entry of the above amendments because the above amendments place the claims in better condition for allowance.

In view of the above amendments and the following remarks, Applicants respectfully request reconsideration and timely withdrawal of the pending rejections to the claims for the reasons discussed below.

Claim Rejections under 35 U.S.C. §112, First Paragraph

The Office Action rejected claims 1-6 and 9-12 under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the written description requirement. the Office Action alleged that the claims contain subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Specifically, the Office Action alleged that the recitation, “The support member extending rearward from a position ‘at’ a front end portion of the machining member” does not have support in the original specification.

Accordingly, Applicants have amended claims 1-6 and 9-12, rendering the rejections of claims 1-6 and 9-12 under 35 U.S.C. §112, first paragraph, moot.

Therefore, Applicants respectfully request withdrawal of the rejections of claims 1-6 and 9-12 under 35 U.S.C. §112, first paragraph and respectfully submit that claims 1-6 and 9-12 are now in condition for allowance.

Claim Rejections under 35 U.S.C. §112, Second Paragraph

The Office Action rejected claims 11-12 under 35 U.S.C. §112, second paragraph as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, the Office Action alleged that claims 11 and 12 are directed to “A bush.” However, the bush is only

element 47 in the Specification. The claims are unclear as to how the other elements in the claim limit the bush.

Accordingly, Applicants have amended claims 11-12 to further recite features for the bush, rendering the rejections of claims 11-12 under 35 U.S.C. §112, second paragraph, moot.

Therefore, Applicants respectfully request withdrawal of the rejections of claims 11-12 under 35 U.S.C. §112, second paragraph, and respectfully submit that claims 11-12 are now in condition for allowance.

Claim Rejections under 35 U.S.C. §102(e) & 35 U.S.C. §103(a)

The Office Action rejected claims 1-6 and 9-12 under 35 U.S.C. §102(e) as allegedly anticipated by Toshihiro (Japanese Patent Publication No. JP2003/165146) (“Toshihiro”). The Office alleged that Toshihiro discloses or suggests every feature recited in claims 1-6 and 9-12.

The Office Action further rejected claims 1-6 and 8-12 under 35 U.S.C. §103(a) as allegedly being unpatentable as obvious over Toshihiro ‘146.

Applicants respectfully submit that the claims recite subject matter that is neither disclosed nor suggested in Toshihiro.

Claim 1, upon which claims 2-7 and 10 depend, recites a mold apparatus. The mold apparatus includes a first mold unit, a second mold unit, and a sprue bush disposed in one of the first and second mold units and having a sprue for charging a molding

material into a cavity space. The mold apparatus also includes a machining member disposed in the other of the first and second mold units in such a manner that the machining member can be advanced and retracted. The machining member performs a predetermined machining for a prototype of a molded product when the machining member is advanced. The mold apparatus also includes a bush disposed radially outward of the machining member to surround the machining member and having a flow passage which is formed in a front end portion thereof and through which a temperature control medium flows, and a support member disposed between the machining member and bush. The support member extends rearward from a center portion of a disc-shaped member in the thickness direction.

Claim 9 recites a method of molding a product in a mold apparatus. The mold apparatus includes a first mold unit, a second mold unit, a sprue bush disposed in one of the first and second mold units and having a sprue, and a machining member disposed in the other of the first and second mold units in such a manner that the machining member can be advanced and retracted. The mold apparatus also includes a bush disposed radially outward of the machining member to surround the machining member, and a support member disposed between the machining member and the bush. The support member extends rearward from a position at a front end portion of the machining member. The method includes charging a molding material into the cavity space via the sprue, cooling the molding material so as to form a prototype of the molded product, and advancing the machining member along an inner circumferential surface of the bush via

the support member so as to perform a predetermined machining on the prototype of the molded product.

Claim 11, upon which claim 12 depends, recites a bush. The bush includes a housing including a cylindrical shape. The housing is configured to surround a machining member radially outward and a support member which extends rearward from a center portion of a disc-shaped member in the thickness direction. The bush is configured for a disc-molding mold. The disc-molding mold includes a first mold unit, a second mold unit, and a sprue bush disposed in one of the first and second mold units and including a sprue configured to charge a molding material into a cavity space. The disc-molding mold also includes the machining member disposed in the other of the first and second mold units in such a manner that the machining member can be advanced and retracted. The machining member is configured to perform a predetermined machining for a prototype of a molded product when the machining member is advanced.

Applicants respectfully submit that certain embodiments of the present invention provide non-obvious advantages. Specifically, certain embodiments of the present invention relate to preventing eccentricity from being carried out between a center portion of a disc substrate and a punch hole when hole punching is performed to complete a disc substrate, e.g. a molded product.

Furthermore, certain embodiments of the present invention provide a bearing 49 (a support member) disposed between a bush 47 and a cut punch 48 (a machining member). A mirror-surface disc 16 (a first disc-shaped member) is disposed on the outside of the

bush 47, as illustrated in Figure 3. Therefore, because the fit between the bush 47 and the cut punch 48 can be tightened, generation of inclination of the cut punch 48 can be prevented.

Furthermore, in certain embodiments, a front end of the bearing 49 (cavity-side) is located at the center portion of the mirror-surface disc 16 in the thickness direction. Therefore, since the bush 47 can be stabilized on the interior of the mirror-surface disc 16, generation of inclination of the cut punch 48 also can be prevented.

Furthermore, in certain embodiments, the cut punch 48 and the bush 47 share a common axis; therefore, the bush 47 and the mirror-surface disc 16 share a common axis. Accordingly, centering of the cut punch 48 and the mirror-surface disc 16 is performed.

Therefore, when hole punching is performed to complete a disc substrate, e.g. a molded product, eccentricity is not carried out between the center portion of a disc substrate and that of the punch hole.

As will be discussed below, Toshihiro '146 fails to disclose or suggest every claim feature recited in claim 1-6 and 9-12, and therefore fails to provide the advantages and the features discussed above.

Toshihiro '146 is directed to a mold device configured to increase a cooling capacity on the side of a movable mold in a mold device for molding in which a gate cut sleeve is fitted to freely slide in relation to the movable mold through a cylinder for guiding a slide (Toshihiro '146, Abstract).

Toshihiro '146 fails to disclose or suggest every claim feature recited in claim 1, and similarly recited in claims 9 and 11. Specifically, Toshihiro '146 fails to disclose or suggest, at least, “wherein the support member extends rearward from a center portion of a disc-shaped member in the thickness direction” as recited in claim 1, and similarly recited in claims 9 and 11 (emphasis added).

Rather, Toshihiro '146 discloses a bearing 32 disposed between a cylinder 27 and a gate cut sleeve 29. A core block 24 is disposed on the outside of the cylinder 27. Furthermore, Toshihiro '146 discloses that a front end of the bearing 32 (cavity-side) is located at a rear end of the core block 24 in the thickness direction, e.g. at a boundary portion between the core block 24 and a movable-side backing plate 21 (Toshihiro '146, Figure; paragraphs [0017]-[0025]).

Therefore, the cylinder 27 of Toshihiro '146 cannot be stabilized on the interior of the core block 24. Accordingly, one of ordinary skill in the art at the time the invention was made would have understood that generation of inclination of the core block 24 cannot be prevented because of the cylinder's 27 instability.

Furthermore, although the gate cut sleeve 29 and the cylinder 27 share a common axis, the cylinder 27 and the core block 24 fail to share a common axis (Toshihiro '146, Figure; paragraphs [0017]-[0025]). Accordingly, one of ordinary skill in the art at the time the invention was made would have understood from the teachings of Toshihiro '146 that a centering of the gate cut sleeve 29 and the core block 24 would be difficult.

Therefore, when hole punching is performed by the gate cut sleeve 29 for completing a disc substrate, e.g. an optical disc, eccentricity may be carried out between the center portion of the disc substrate and that of a punch hole.

Accordingly, Toshihiro '146 fails to disclose or suggest, at least, "wherein the support member extends rearward from a center portion of a disc-shaped member in the thickness direction" as recited in claim 1, and similarly recited in claims 9 and 11 (emphasis added).

Claims 2-6 and 10 depend from claim 1. Claim 12 depends from claim 11. Accordingly, claims 2-6, 10, and 12 should be allowable for at least their dependency upon an allowable base claim, and for the specific limitations recited therein.

Therefore, Applicants respectfully request withdrawal of the rejections of claims 1-6 and 9-12 under 35 U.S.C. §102(e) and §103(a), and respectfully submit that claims 1, 9, and 11, and the claims that depend therefrom, are now in condition for allowance.

CONCLUSION

In conclusion, Applicants respectfully submit that Toshihiro '146 fails to disclose or suggest every feature recited in claims 1-7 and 9-12. The distinctions previously noted are more than sufficient to render the claimed invention unanticipated and non-obvious. It is therefore respectfully requested that all of claims 1-7 and 9-12 be allowed, and this present application be passed to issuance.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, Applicants' undersigned representative at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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Enclosures: Petition for Extension of Time
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